Promoting Financial Innovation In Ghana:
Issues and Challenges

May 2000

Sigma One Corporation

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by:

Sigma One Corporation

In fulfillment of the following milestones:

4.5 Develop a conceptual strategy for developing innovative financial instruments (year 1 & 2)

May 2000 **Sigma One Corporation**

EXECUTIVE SUMMARY

This paper has been prepared by the Financial Sector Consultative Committee in response to a request from the Inter-Ministerial Committee on Competitiveness (IMCC). The paper looks at financial innovation within a general framework in which innovation is demand-driven with government providing a facilitating environment and providing a leadership role in promoting public-private partnerships for specific institutional innovations. The success of public-private partnerships has been demonstrated in initiatives such as the establishment of the Ghana Stock Exchange and ongoing new initiatives such as the Ghana Futures Exchange, the Credit Reference Agency and the Forward Market for Foreign Exchange.

Within this framework, financial innovation in Ghana is likely to be driven by the following factors:

1. Risk reflected in the volatility of interest rates

2. Regulatory tax

3. Technological advances

4. Level of economic activity and changing customer needs

The FSCC believes that financial innovation in Ghana has been hampered by regulatory rigidity, limited financial know-how and inadequate technology. The requirement set by regulatory agencies that they approve new products before their introduction to the market has slowed down the pace of innovation because of delays in obtaining regulatory approvals. Such delays increase the risk that financial institutions may not be able to recover the investment that has to be made in developing and launching a new product. A balance, therefore, has to be struck between the need for regulatory oversight and the need for incentives to the private sector to be innovative.

In the Committee's view a balanced approach with the following elements should be adopted.

1. The Bank of Ghana, Securities Regulatory Commission and National Insurance Commission should appoint of a *New Products Officer* to research emerging new products both in Ghana and internationally and to advise the respective regulatory agency on appropriate regulatory adjustments to accommodate such products. The New Products Officer should provide technical support to the regulatory agency during the review and approval of new products and make recommendations to the agency on how it could collaborate with the private sector to promote specific new products.

2. Financial institutions should inform their respective regulatory agencies about major new products that they intend to introduce. Discretion should be exercised in determining whether the product is significantly new or a minor refinement to existing products. Where in doubt, the regulatory agency should be consulted.

3. Financial institutions should be permitted to introduce the product if the regulatory agency has not raised objections to the product within 30 days of being informed of the product.

The Committee believes that regular consultations between the New Products Officer of each regulatory agency and the institutions under its jurisdiction would enhance the innovation process.

PROMOTING FINANCIAL INNOVATION IN GHANA: ISSUES AND CHALLENGES

INTRODUCTION

This paper has been prepared by the Financial Sector Consultative Committee in response the request from the Inter-Ministerial Committee on Competitiveness for proposals for facilitating the introduction of various new financial instruments to improve the efficiency of the private sector and its ability to compete on international markets. In recognition of a perception that the rate of innovation in the financial sector is slow, the report seeks to identify the constraints to financial innovation with a view to proposing strategies for eliminating them.

A Conceptual Framework

Innovation has always been a hallmark of the financial services industry. There are some who have characterized the history of finance as a "chronicle of innovations"[1] Innovation means the introduction of something new, such as an idea, method or device. Innovation is a diffusion process. Because diffusion does not happen overnight, innovations tend to spread slowly. However, there are some innovations, especially in the financial sector that spread very fast. To promote financial innovation in Ghana, we first need to understand why innovation in financial services occurs.

An *invention* is an unfolding technological opportunity. An *innovation* is a profitable application of an invention. *Autonomous innovation* is an innovation not induced by outside forces; it just happens. This is usually quite rare. *Induced innovation* is one generated by outside forces. *Market induced* innovation is one generated by market forces such as price or interest rate movements. *Regulation-induced* innovation is one stimulated by regulatory constraints such as geographic, price or product restriction. Financial innovations may occur through new products such as financial instruments and services or new processes.

Financial innovations are most easily explained as induced by either market or regulatory factors. In some instances, both market and regulatory forces combine to induce financial innovation. The environmental factors that drive the process of financial innovation can be captured by the following components suggested by Professor Van Horne[2], who lists six stimuli that prompt financial innovation conceptualized as the TRICK model:

Transparency

Risk Management

Information Technology

Customers

Kapital Adequacy

In detail, they are:

[1] Mark D. Flood, "Two Faces of Financial Innovation", Review, Federal Reserve Bank of St. Louis, Vol. 74, No. 5, September/October 1992, Pp 3-17.
[2] James C. Van Horne, "Of Financial Innovations and Excesses," Journal of Finance, 40 (July 1985), 621-31.

- Transparency requirements in the financial sector may drive innovations as financial institutions try to structure products to minimize reporting requirements. This represents the *T* factor.

- Volatile inflation rates and interest rates, the *R* component of TRICK in terms of the underlying forces driving risk management. Closely related to the volatility of inflation and interest rates is the level of economic activity. In periods of economic prosperity, the focus tends to be on growth, and the thrust of new product development is on achieving this objective. In a sharp recession, the focus shifts to risk-reducing services.

- Technological advances, the *I* component of TRICK. New technology in computer-based information and funds transfers prompts changes in the delivery of financial services. The changes here tend to be process changes directed to making the market more efficient operationally.

- Changing customer tastes and needs, the *C* factor

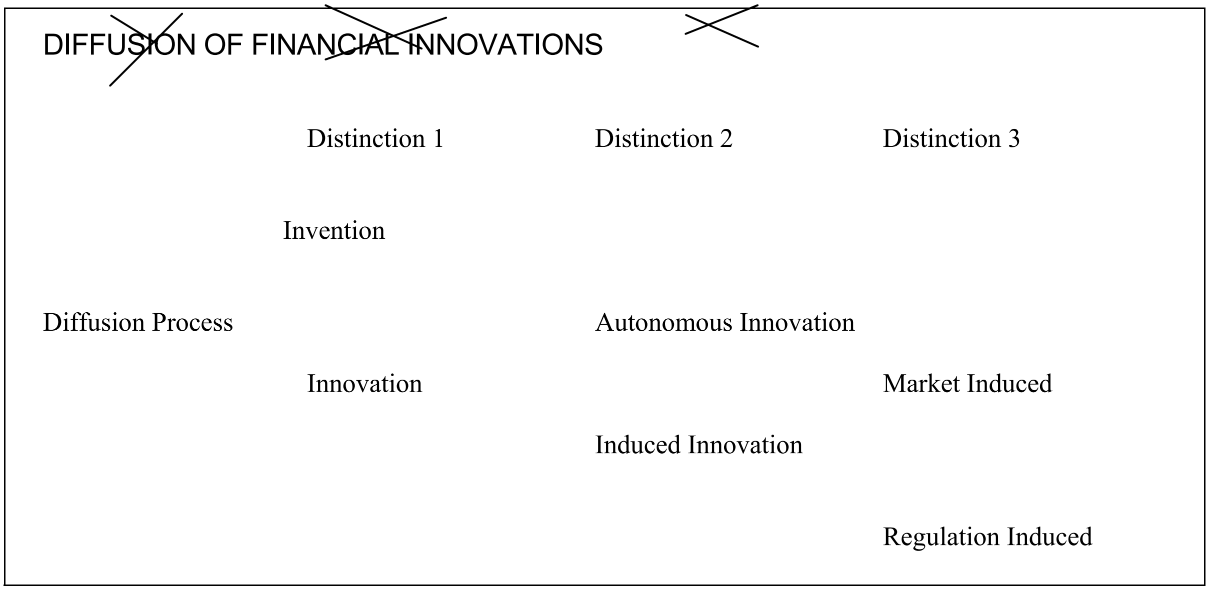
- Regulatory changes and circumvention of regulations, the *K* component of TRICK in terms of capital adequacy capturing the thrust of bank regulation.

- Tax changes, the notion of regulation as a tax, also captured by the *K* component.

The combination of TRICK and rational self-interest generates a model of change or a framework for analyzing the process of financial innovation.

$$\text{TRICK} + \text{Rational Self Interest} \rightarrow \text{Financial Innovation}$$

Thus, individuals do not innovate out of a spirit of magnanimity. Financial innovations are created in anticipation of material gain. In this context, a guiding principle for promoting financial innovation is that such innovations should be *demand-driven* by the requirements of the private sector and should be the outgrowth of the pursuit of profitable new processes and products by financial institutions. The role of government should be restricted to one of providing a conducive environment for the private sector to make sound choices within the context of a financial system that meets the test of effective regulation.



Regulation-Induced Innovation

Regulated firms incur costs – called *regulatory taxes*, by economists – as a result of operating restrictions that constrain their profit-maximizing efforts. Managers' desire to reduce these taxes creates fertile grounds for the birth of financial innovations – new financial products and processes that improve the efficiency with which financial transactions are conducted, either by serving customers' needs in new unregulated ways or by lowering costs. Examples of financial innovations that have been regulation induced include:

Regulation-Induced Innovations	
Capital Adequacy Requirements	1. Loan sales[3] 2. Securitization
Non-Interest Bearing Reserve Requirements	1. Loan sales 2. Securitization
Interest Rate Controls (Regulation Q in the USA)	1. Eurodollar deposits

Generally, if financial market participants are successful in using financial innovations to improve their revenues and/or reduce their costs in ways that avoid existing regulatory constraints, regulators may seek to re-regulate to close loopholes and expand the scope of regulation. Completing the cycle in what has been called the "regulatory dialectic"[4], financial institutions find new loopholes and incentives in the revised regulations and innovate again.

[3] Non-interest-bearing reserve requirements that a bank must hold with the central bank represent a form of tax that adds to the cost of funding the loan portfolio. Regulatory taxes, such as reserve requirements, create an incentive for banks to remove loans from the balance sheet by selling them without recourse to outside parties. Reducing assets, rather than boosting capital, can increase capital adequacy. Loan sales achieve this result.

[4] Kane, Edward J. "Microeconomic and Macroeconomic Origins of Financial Innovation", in *Financial Innovations: Their Impact on Monetary Policy and Financial Markets* (Kluwer-Nijhoff, 1984,) pp. 2-20.

Market-Induced Innovation

Market induced innovations include key components of TRICK, such as products for risk management, technology-based products and changing customer needs.

Risk Management Products

Market forces that drive innovative financial instruments are the need for risk management.

The sources of risk that are relevant for Ghana's economy are as follows:

1. **Credit Risk**: The risk that promised cash flows from loans held by a lending financial institution or an investor might not be paid in full. Instruments susceptible to credit risk are loans made by bank and non-bank financial institutions and bonds issued by companies either for public flotation or for private placement.

2. **Liquidity Risk**: From an institutional perspective, liquidity risk arises when a financial institution's liability holders, such as depositors or policyholders, demand immediate cash for their financial claims. Other investors in the economy may face liquidity risk if they are holding financial instruments that cannot be readily converted to cash without a significant loss of value.

3. **Price Risk**: The loss in the value of financial assets resulting from unexpected changes in interest rates and the risk that maturing investments and cash flows from existing investments may have to be reinvested at lower rates of interest. The risk incurred in trading financial assets and liabilities due to changes interest rates, exchange rates and other asset prices.

Financial innovations that have been associated with risk management are listed in the following table:

Risk	Financial Innovation
Credit Risk	1. Credit Derivatives 2. Loan Sales[5] 3. Securitization
Liquidity Risk	1. REPOS (backed by debt and equity instruments) 2. Interbank Lending 3. Loan Sales 4. Securitization
Interest Rate Risk	1. Forward Contracts 2. Futures Contracts 3. Options 4. Swaps 5. Loan Sales
Exchange Rate Risk	1. Forward Contracts 2. Futures Contracts 3. Options 4. Swaps 5. Stock Index Options
Stock Market Risk	1. Stock Index Futures

[5] Loan sales remove assets (and credit risk) from the balance sheet).

TECHNOLOGICAL AND ECONOMIC CONDITIONS

As institutions search for financial innovations that do not violate existing regulations, changes in technology and the economy create opportunities for institutions to innovate and cause customers to demand new products. Broadly defined, technology includes computers, visual and audio communication systems, and other information systems. An efficient technological base for a financial institution can result in the following:

1. Lower costs by combining labor and capital in a more efficient mix.

2. Increased revenues by allowing a wider array of financial services to be produced or innovated and sold to customers.

Significant changes in the economic environment such as financial liberalization interact with technological change to create innovative products. For example, zero-coupon bonds were developed in low inflation periods, while inflation-indexed bonds are popular during inflationary periods.

The Impact of Technology on Wholesale and Retail Banking

Wholesale Banking:

Banks can use technology to increase their ability to provide cash management or working capital services. These include:

1. Controlled disbursement accounts: An account feature that establishes for the customer in the morning almost all payments to be made in a given day. The bank informs the client of the total funds it needs to make disbursements and the client wires the amount needed.

2. Funds Concentration: Redirects funds from accounts in a large number of different banks or branches to a few centralized accounts at one bank.

3. Electronic Funds transfer: Includes overnight payments.

4. Cheque deposit services: Encoding, endorsing, microfilming and handling customers' cheques.

5. Electronic Interchange Data: A specialized application of electronic mail, allowing businesses to transfer and transact invoices, purchase orders, and shipping notices automatically, using banks as clearing houses.

Retail Banking Services

Important technology driven retail product innovations include:

1. Automated Teller Machines (ATMs).

2. Point-of-Sale Debit Cards: Allows customers who choose not to use cash, cheques or credit cards for purchases to buy merchandise and to have the funds immediately deducted from their chequing accounts and immediately transferred to the merchant's account.

3. Home banking: Usually connects customers to their deposit and brokerage accounts and provides a bill-paying service via personal computers.

4. Pre-authorized debits/credits: Includes direct deposit of payroll cheques into bank accounts and direct payment of bills.

5. Paying bills by phone: Allows direct transfer of funds from the customer's bank account to third parties either by voice command or by touch-tone telephone.

6. Retail sweep account: Allows customers to sweep balances in household transaction accounts into savings deposits overnight or over the weekend.

Technology in Capital Markets

Technology has had a significant impact on capital market institutions. There are some who have proclaimed the death of the stock exchange, as we know it, to be replaced by internet-based floorless trading arrangements. The technology-driven innovations in stock markets include:

1. Electronic trading.

2. Technology has facilitated the integration of markets. Increased liquidity is achieved by reducing the number of markets. This occurs through a consolidated limit order book (CLOB) that brings together in one place all the limit orders to buy and sell a specified number of shares at a specified price) submitted to individual markets.

3. Internet trading

4. Electronic Commission Networks (ECNs): ECNs charge commissions for providing liquidity, something that a regular broker cannot do.

5. Shorter settlement times: Move towards T+1 settlement in 2001 versus T+5 settlement in Ghana. T+ 0 not far behind.

PROMOTING FINANCIAL INNOVATION IN GHANA

Which TRICK factors will drive financial innovation in Ghana? Given the current conditions, the following innovation drivers can be considered:

1. Risk reflected in the volatility of interest rates

2. Regulatory tax

3. Technological advances

4. Level of economic activity

However, the process can be accelerated by positive action to promote innovation. Among the steps that can be taken to actively support financial innovation are:

Regulatory Flexibility
Regulatory agencies should revamp rules to support innovation. Increasingly, use should be made of guidelines rather than prohibition. For example, the Securities Industry Law prohibits short sales. An innovation-supporting approach is to permit short sales, but set guidelines on their use such that prudential rules and investor protection are maintained. Legislation should be forward looking. For example, the definition of securities under the Securities Industry Law does not cover derivative securities. There should be more regular reviews of key laws that drive financial transactions such as the Companies Code.

Improved Financial Know-How
Financial innovation requires high levels of financial expertise. The ability to recognize the risk-return profiles of instruments and to re-engineer them into more complex, but more useful financial instruments requires that financial institutions and their regulators have the requisite expertise. Current conditions in Ghana suggest that such expertise falls short of what is required. The lack of such expertise is reflected in delays in regulatory approvals caused by fear of approving unknown products. A recent example is the Commodity Clearing House (CCH) project designed to support the issue and trading of commodity-backed warrants. The product has been in limbo for years because no regulatory agency wanted to accept responsibility for it.

Technology
One of the drivers of innovation in the financial sector has been the convergence of computing and telecommunication technologies. While a significant improvement in telecommunication has occurred in Ghana since the privatization of the industry and the licensing of a second operator, the level of development of telecommunications is still inadequate to support many of the innovative products springing up in other parts of the world. Strong market position of Ghana Telecom has hampered the development of other telecommunication companies that can add value.

SECTOR CONSIDERATIONS

Insurance

Insurance companies develop and market products that fulfill two basic needs:

- Protection, and
- Savings or investments

In the non-life/general insurance business, products have been developed to cover many risks, which may include:

- Motor
- Fire
- Burglary
- Personal Accident
- Liability Products

- Marine
- Bonds
- Goods/Cash in Transit
- Contractors All Risk

These lines of product have the following characteristics:

1. Offer protection with little or no savings element
2. The life span of such products is very short, typically one year, but with renewal feature
3. High loss ratios

For the above reasons, the funds from these products are invested primarily in short-term instruments. Because they do not generate long-term funds for investment in the financial markets, the impact on capital markets is minimal.

Life and health products include:

1. Life Insurance Products
    - Credit Life
    - Ordinary Life Insurance
    - Endowment Plans
    - Universal Life
2. Health products
3. Annuity products
4. Private Pension Plans
5. Profit-Sharing Plans
6. Mutual Funds

Life products are characterized by:

1. Long-term contracts
2. Offer both protection and substantial savings elements
3. Have mass appeal and can easily be marketed to meet varied needs of the general population.

Life and pension products are vehicles for capital accumulation in an economy. Promotion of such products will increase the availability of long-term capital for business investment. Such promotion is usually given through tax incentives such as special taxation rules for insurance companies, tax exemption on the proceeds of insurance and deferral of taxes on the investment build-up embedded in life products.

For the above reasons, insurance companies are major players in the capital markets. They are major investors in venture capital funds and large infrastructure projects. They are also active in the publicly traded and private placement debt and equity instruments in major international markets.

The potential of new insurance products to contribute to the capital market in Ghana is limited by the fact that about 90% of gross revenue from the insurance market is attributed to non-life business, leaving only 10% of premiums coming from life, health and pension products. Pension products are virtually non-existent because of the monopoly given to SSNIT in terms of the tax deductibility of contributions.

Bank and Non-Bank Financial Institutions

There has been significant institutional innovation in Ghana. Following the Financial Sector Adjustment Program (FINSAP) of the 1980s, several new types of financial institutions have emerged in the market. These include:

- Leasing Companies
- Finance Companies
- Mortgage Finance
- Venture Capital
- Savings and Loan
- Discount Houses

However, these institutions have not produced as many financial innovations as their counterparts have in more advanced financial markets.

In the banking sector, a number of innovations have been tried, including:

- Retail Negotiable Certificates of Deposit (NCDs), pioneered by CAL Merchant bank with a two-way quotation
- Dollar NCDs
- Forward Foreign Exchange Contracts

The possibilities for new products in the corporate lending area, such as commercial paper, have been limited because of an unstable macroeconomic environment. With persistent high interest rates, the banks have chosen to retain their prime customers by lending to them at rates close to or even below Treasury bill rates. Thus, prime borrowers have not had an incentive to issue commercial paper.

Technology-based innovations, such as ATMs, telephone and online banking, have been hampered by a poor communication system. Banks wishing to introduce such products have had to develop their own communication system because of the unreliability of services available through the existing telecommunications companies.

Innovation in this sector has suffered from regulatory drag on the part of the Bank of Ghana. The slowness of the Bank of Ghana to respond with appropriate regulatory adjustment to accommodate new products has retarded innovative activity.

The Securities Industry

The major problem in the securities industry had been on the supply side. With only 22 listed equities and four dollar-denominated bonds, there has not been an adequate supply of financial instruments on the market. Insurance companies and SSNIT with large pools of funds may not have enough capital market instruments to buy.

Policies that stimulate the demand for securities have not been forthcoming. Demand can be enhanced through the promotion of products such as:

- Mutual Funds/Unit Trusts
- Private Pension Schemes
- Enhanced insurance company investment powers

While progress is being made in providing the regulatory framework for mutual funds and unit trusts, progress has been slow.

THE ROLE OF GOVERNMENT IN FINANCIAL INNOVATION

The principle that financial innovations should be market-driven with government providing a facilitating role still leaves a lot of room for government leadership in financial innovation. Indeed, many financial innovations in Ghana have come about through public-private partnership. An example of government leadership in financial innovation was the establishment of the Ghana Stock Exchange in 1990. In this instance, the government took the lead in mobilizing the private sector and international technical assistance to support the establishment of the stock exchange. Other examples of such public-private partnerships include:

1. The Ghana Futures Exchange, which has already moved from the idea stage to a pre-feasibility report conducted by the Ghana Stock Exchange and the Bank of Ghana and a National Workshop conducted in 1999.

2. The Credit Reference Agency being promoted as a public-private partnership by the Bank of Ghana.

3. A Currency Forward Market, promoted by the Bank of Ghana.

Experience in such public-private partnerships indicates that they can be effective, where they have been vigorously pursued. The approach could be made more consistent by institutionalizing it among all regulatory agencies.

It is the view of the FSCC that the Bank of Ghana, Securities Regulatory Commission and National Insurance Commission should appoint of a *New Products Officer* to research emerging new products both in Ghana and internationally, and to advise the respective regulatory agency on appropriate regulatory adjustments to accommodate such products. The New Products Officer should also make recommendations to the regulatory agency on how it could collaborate with the private sector to promote specific new products.

The Committee deliberated extensively on the issue of whether financial institutions wishing to introduce new products need to seek regulatory approval before launching new products. It was the view of participants in the financial sector that if all new products have to be approved by regulatory agencies before their introduction it would stifle innovation. This is because the period of time regulatory agencies might need to understand the product could prove costly to the innovating institution. First, financial institutions invest resources to develop and launch new products, which means that they need to make a return on their investment. The uncertainty as to whether or not regulatory approval would be obtained and the timeliness of such decisions can discourage financial institutions from making the decision to invest in the development of a new product. Secondly, extensive delays in the regulatory process expose the financial institutions to changes in the marketplace that might adversely affect the introduction of the product.[6] Finally, financial institutions are concerned about the leakage of information on products they have developed to their competitors, the risk of which increases the longer the product stays with the regulatory agency.

A further complication with requiring prior regulatory approval is that many so-called new products are, on closer examination, refinements to existing products. New products might also be created by extracting and combining features of a number of existing products and repackaging them as a new product. An example is a hybrid bank account, such as the "Meridian Gold" account, which was both a current account with full cheque-writing privileges, and also a savings account that paid interest, subject to the maintenance of a minimum balance. Committee members were of the opinion that some new products had such familiar features that a formal regulatory review adds no value to the financial system and may in fact deter innovation.

In the Committee's view a balanced approach with the following elements should be adopted:

1. The Bank of Ghana, Securities Regulatory Commission and National Insurance Commission should appoint of a *New Products Officer* to research emerging new products both in Ghana and internationally and to advise the respective regulatory agency on appropriate regulatory adjustments to accommodate such products. The New Products Officer should provide technical support to the regulatory agency during the review and approval of new products and make recommendations to the agency on how it could collaborate with the private sector to promote specific new products.

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3. Financial institutions should be permitted to introduce the product if the regulatory agency has not raised objections to the innovation within 30 days of being informed of the product.

SUMMARY AND CONCLUSION

Market-induced or regulation-induced forces usually drive innovation in financial markets. These forces include transparency needs, risk management, information technology, changing customer needs and regulation. This impact of these forces can be amplified if the environment exhibits regulatory flexibility, steadily improving technology and the availability of adequate expertise. The role of government is to provide a facilitating environment for financial innovation. Financial innovation in Ghana has been hampered by regulatory rigidity. In addition, a lack of modern financial know-how and the slow rate of technological development have hampered the ability of financial institutions to adapt innovations that have been introduced elsewhere.

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[6] As an example, consider a product designed to provide inflation protection to investors. Since this product is more marketable during an inflationary period, the institution promoting the product will find it most profitable to launch the product when investors are concerned about inflation. If as a result of regulatory delays, the economy moves into a low inflation period, the product would have lost its market appeal and the financial institution would have lost its investment in product development.

Regulators have a particularly important role to play in promoting innovation. A proactive stance, with regulators at the forefront of innovation, would require seeking out innovations and the requisite regulatory frameworks for them, through their contacts and relationships with regulatory agencies and institutions globally. The Committee has deliberated extensively on the issue of whether financial institutions wishing to introduce new products need to seek regulatory approval before launching new products. It was the view of participants in the financial sector that if all new products have to be approved by regulatory agencies before their introduction, it would stifle innovation because the amount of time regulatory agencies would need to understand the product could lead to costly delays to the sponsoring financial institution. The process can be accelerated through the appointment of a New Products Officer for each regulatory agency.